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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,879	05/29/2001	Romain L. Billiet		5124

7590 08/20/2003  
R. L. BILLIET  
135A MALACCA STREET  
PENANG, 10400  
MALAYSIA

EXAMINER

TRAN, LEN

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/20/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/873,879

Applicant(s)

BILLIET ET AL.

Examiner

Len Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-33, 35, 36, 38-39 is/are rejected.
- 7) ☒ Claim(s) 34 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 24-33, 35, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amaya et al (US 5,976,457), and further in view of Wiech, Jr. (US 5,234,655).

Amaya et al disclose the rapid and accurate method of producing molding tools comprising the steps of providing a standard base mold (51), milling the pockets in the mold base, fabricating an interchangeable insert (50) having mounting surface matching the pockets,

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and securing the insert to the base pocket. The *insert is produced by metal powder injection molding* (figures 1-8) (col. 9, lines 39-42, lines 54-67, col. 10, lines 1-60). The method allows improved dimensional accuracy and reduction of surface texture inconsistency. The resulting mold includes coordinates reference points or other similar design features. The resulting mold can be used to cast materials such as aluminum or zinc.

However, Amaya et al fails to disclose the injection of ceramic powder in an organic binder comprises approximately 60% by volume of a fine grain alpha aluminum oxide that has been milled to its ultimate crystal size and approximately 40% by volume of a thermoplastic binder mixture.

Wiech, Jr. discloses discloses the injection of ceramic powder in an organic binder comprises approximately 60% by volume of a fine grain alpha aluminum oxide that has been milled to its ultimate crystal size and approximately 40% by volume of a thermoplastic binder mixture for the purpose of size reduction, packing density, heat dissipation, conductor geometry and complex interconnection problems are substantially reduced (col. 3, lines 1-6, col. 6, lines 20-45, col. 7, lines 52-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide ceramic powder as taught by Wiech, Jr., in Amaya et al since size, packing density, heat dissipation, complex interconnection problems are substantially reduced.

4. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amaya et al (US 5,976,457) in view of Wiech, Jr. (US 5,234,655), in view of Ryuhgoh et al (US 5,432,224).

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Amaya et al and Wiech, Jr. disclose the claimed invention in paragraph 3, but fail to teach adding stearic acid to the binder mixture.

However, Ryuhgoh et al disclose using stearic acid with ceramic powder and binder as a plasticizer or lubricant.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to combine stearic acid as taught by Ryuhgoh et al, in Amaya et al and Wiech, Jr. in order to lubricate the ceramic powder and binder.

***Allowable Subject Matter***

5. Claims 34 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior arts of record fail to teach 60% by volume of the fine grain alpha aluminum oxide is a calcined alumina with an average particle size of less than 0.5 microns and shrinking the green articles by about 17%.

*Response to Arguments*

6. Applicant's arguments with respect to claims 24-39 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Len Tran whose telephone number is (703)605-1175. The examiner can normally be reached on M-F, 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the


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organization where this application or proceeding is assigned are (703)305-3602 for regular communications and (703)305-3602 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Len Tran  
Examiner  
Art Unit 1725

LT  
August 8, 2003



M. ALEXANDRA ELVE  
PRIMARY EXAMINER